

Product Data Sheet

Series 300–950 Skylight System – Crystal Structures

CSI Section: 08 65 00 – Skylights

1. Product Name & Description

Product Name: Series 300–950 Skylight System

Description:

The Series 300–950 Skylight System by Crystal Structures is a complete engineered daylighting solution integrating aluminum framing, insulated glazing, and factory-formed curbs. Designed for commercial, institutional, and civic buildings, the system delivers balanced natural light, proven weather performance, and architectural versatility in a wide range of configurations.

Offered in multiple frame depths, thermal options, and glass types, the Series 300–950 line can be configured as unit skylights, continuous runs, or structural glazed assemblies—all designed and tested to meet or exceed current code and energy requirements.

2. Manufacturer

Manufacturer: Crystal Structures

Address: 3333 N Mead, Wichita, KS 67219

Phone: (316) 838-0033

Website: <https://www.crystalstructuresglazing.com>

3. Applicable Standards & Testing

Systems are engineered, fabricated, and tested in accordance with:

- **ASTM E283** – Air Leakage
- **ASTM E330** – Structural Load
- **ASTM E331 / E547** – Water Penetration Resistance
- **AAMA 1503 / 2604 / 2605** – Thermal and Finish Performance
- **NFRC 100 / 200 / 500** – Thermal Ratings
- **ASTM E1886 / E1996** – Impact Resistance (optional with glazing)
- **UL 790 / ASTM E108** – Roof Assembly Fire Rating (Class B standard, Class A optional with selected polycarbonate)
- Complies with **IBC, ASCE 7, and NFRC** requirements

- LEED and Energy Star compatible glazing options
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4. System Components

Framing / Structure

- **Material:** 6063-T5/T6 extruded aluminum alloy.
 - **Profiles:** Series 300–950 framing depths for short to long spans up to 40 ft.
 - **Thermal Break:** Poured-and-debrided or polyamide isolator for condensation resistance.
 - **Finish Options:**
 - **Anodized:** Clear, Bronze, Black (AAMA 611)
 - **Painted:** 70% PVDF (Kynar®/Hylar®) (AAMA 2605)
 - Custom colors available.
 - **Frame Design:** Mechanically fastened or factory-welded rafter and mullion assemblies with integral gutters, weep channels, and factory-sealed corners for superior drainage.
 - **Connection:** Compatible with wood, steel, or concrete curbs; factory-welded curb frames available for preinstallation.
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Glazing / Light-Transmitting Elements

- **Standard:** Insulated glass units (1" nominal) with tempered outer lite and laminated inner lite.
- **Options:**
 - Low-E, solar-control, or bird-safe glass
 - Triple IGU or spandrel panels
 - Multiwall polycarbonate for lightweight or impact resistance
 - Hurricane, acoustic, or security glazing configurations
- **Glazing Retention:** Pressure-plate and snap-cap system with EPDM gaskets and silicone sealant (ASTM C1184).
- **Performance (typical):**
 - U-Factor: 0.25 – 0.38
 - SHGC: 0.22 – 0.45
 - Visible Light Transmittance: 0.45 – 0.70

Water Management / Flashing

- Integral gutter and weep system designed for rapid water evacuation.
- 4× typical weep capacity and 3× water movement compared to traditional skylight designs.
- Factory-formed aluminum sill and head flashing integrate with roofing systems (TPO, EPDM, modified bitumen, or metal panel).

Flashing & Drainage

- Fully integrated internal gutter and weep network routes water to perimeter curbs.
 - Factory notched drainage channels prevent blockage and water retention.
 - Aluminum flashing compatible with TPO, PVC, EPDM, and metal roof membranes.
 - Optional stainless steel or copper flashing for historic applications.
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5. Performance Criteria

Test / Property	Result / Description
Air Infiltration	≤ 0.06 cfm/ft ² @ 1.57 psf (ASTM E283)
Water Resistance	No leakage @ 15 psf (ASTM E331/E547)
Structural Deflection	L/175 max (ASTM E330)
Thermal Performance	CRF ≥ 60 ; Frame interior $\geq 50^{\circ}\text{F}$ at -10°F ambient
Fire Rating	Class B standard; Class A optional (UL 790)
Impact Resistance	FM 4473 / UL 2218 compliant (optional)

6. Design & Fabrication

- Custom-engineered to meet specific span, load, and geometry requirements.
 - Factory fabrication ensures precise mitered connections and clean sightlines.
 - Field or factory glazing available based on module size.
 - Integrated condensation gutter and weep system for moisture management.
 - Optional operable vents, motorized sections, and smoke hatches available.
 - Accessory track can be built into interior frame for shading or maintenance tie-off.
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7. Installation

- Install per manufacturer's instructions and approved shop drawings.
 - Verify curb size, alignment, and membrane compatibility prior to setting.
 - Anchor assemblies per engineer-of-record requirements.
 - Seal and flash continuously to roof membrane per NRCA guidelines.
 - Field-test per ASTM E1105 recommended for critical applications.
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8. Maintenance & Warranty

- Inspect annually for sealant and gasket integrity.
 - Clean glass with non-abrasive detergents.
 - **Warranty:**
 - 10 years – Structural frame and finish
 - 10 years – Insulated glass seal
 - Extended coverage available upon request
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9. System Variants

Series	Typical Application	Span Range
Series 300 Light Commercial / Unit Skylights		Up to 8 ft
Series 575 Continuous Ridge / Vaulted Systems		8 – 20 ft
Series 750 Continuous Ridge / Vaulted Systems		8 – 20 ft
Series 950 Structural Large-Span / Custom Geometry		20 – 40 ft

Available configurations: Ridge, Pyramid, Barrel Vault, Polygonal, Lean-To, Freeform.

10. Typical Applications

- Educational and Institutional Facilities
 - Commercial Atriums and Concourses
 - Retail Centers and Office Complexes
 - Transit Hubs and Public Spaces
 - Greenhouses and Botanical Structures
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11. Submittals & Engineering

- Product data and detail drawings
 - Engineering calculations for spans and load conditions
 - Samples for finish and glazing confirmation
 - All projects engineered and sealed by a licensed structural engineer when required
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12. Ordering Information

Provide: Project name, location, span dimensions, roof slope, glazing type, finish, curb detail, and desired geometry when requesting quotation or shop drawings.